CENTRALIZED AUTOMATIC REPORTING ON TRUNKS (CAROT)

CAROT 1

CAROT CENTER OPERATION AND ADMINISTRATION

SUMMARIZATION OF TEST RESULTS

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1. GENERAL

1.01 This section describes the various reports compiled and produced by the Centralized Automatic Reporting On Trunks (CAROT) Controller for the purpose of disseminating trunk test results and Automatic Transmission Measuring System (ATMS) equipment diagnostic (status) information obtained during routine trunk tests.

1.02 This practice has been reissued to include information relative to a program change for providing additional Trunk Transmission Maintenance Index (TTMI) information and to further clarify other information. Since this is a general revision, change arrows are omitted.

1.03 The information contained in the reports covered in this section is divided into two major categories, Office Results and CAROT Center Results, which are described as follows:

> ***Office Results:*** These reports consist of separate categorical listings of specific trunk or facility failures as determined by transmission or operational tests. The results of these tests are then transmitted to the responsible control office for corrective action.

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CAROT Center Results: These reports are arranged as separate listings of associated ATMS equipment troubles and summaries of trunk testing results. Reports of ATMS equipment trouble are referred to the responsible personnel for corrective action and the summaries of trunk testing results are forwarded to interested levels of management.

1.04 The sorting and analysis of accumulated test results into the appropriate Office and CAROT Center Results categories are performed by the Analysis Program. This program is normally automatically activated by the Test Program at the conclusion of a night's testing. The Analysis Program can also be called and initialized directly by operator action whenever information pertaining to the status of trunks, facilities, or ATMS equipment must be obtained at a time other than that normally scheduled. This direct mode may also be used to restart the program in the event of an interruption of the Results Analysis Program or premature termination of the Test Program.

1.05 Information concerning loss deviation and noise measurement results is accumulated by the Analysis Program for the purpose of providing data for computing the TTMI. The resulting report is based only on the status of those trunks that have been flagged for inclusion in TTMI.

1.06 Test results data comprising the Management Summary, Index Information, and Daily Summary reports may be obtained for distribution to responsible control offices and management personnel through the use of the Report Program. These reports can be produced via the line printer and/or paper tape punch.

1.07 There may be situations where it is desirable to diagnose troubles by evaluating the total operational status of trunks associated with a particular remote office test line (ROTL) office, trunk group, facility, or single port. To this end the Dump Program provides the means for extracting a partial or complete test file containing all test data (both in-tolerance and out-of-tolerance measurements) of the specified equipment area. The test results may be reproduced via the line printer (or teleprinter if no line printer is included as part of the system) or paper tape punch as requested. The Dump Program can also be used to produce a copy of the test file for the purpose of obtaining ROTL priming information for particular trunks when the CAROT Interrogator Program, described in Section 103-251-300, is to be used as a trouble-shooting aid.

1.08 During routine testing, real-time diagnostics are provided by the Test Program on the system teleprinter. These diagnostics identify trunks which should be taken out of service. They also provide information on the progress of testing. For a detailed description of these diagnostics, refer to Section 010-410-314.

2. ANALYSIS PROGRAM

2.01 The function of the Analysis Program is to analyze and sort trunk test results into the various designated categories comprising the Office Results and CAROT Center Results reports. This program is called in automatically by the Test Program upon completion of a night's testing or may be initiated manually by the operator whenever changes in trunk status merit running the Test Program at other than the regular prescribed time.

A. Automatic Initialization

2.02 Procedures for calling in the Analysis Program automatically are included in the Test Program initialization dialogue as described in Section 010-410-314.

B. Manual Initialization

2.03 The procedure for manual initialization of the Analysis Program via the system teleprinter is given in Table A. After the program dialogue is completed up to Step 9 of Table A, the execution of the Analysis Program is the same for the manual and automatic initialization modes. A typical printout of the initialization dialogue for the manual mode is shown in Fig. 1.

C. Diagnostic Messages

2.04 Troubles encountered during execution of the Analysis Program are identified via diagnostic messages printed out on the system teleprinter while the program is running. Some of these trouble messages require operator action while others are for information only. Table B is a listing of the Analysis Program diagnostic messages. For diagnostic messages requiring operator action, the appropriate course of action is indicated in the

explanation accompanying the diagnostic message listed in Table B.

3. OFFICE RESULTS

3.01 Office Results reports contain those test results which reflect specific trunk or facility troubles. These reports are forwarded to the responsible control offices for corrective action. Upon completion of the Analysis Program, test results for a given office are automatically produced via the paper tape punch and the line printer (if the CAROT Controller is equipped with the line printer). Each report type contains sufficient information for identifying the trunk or facility experiencing trouble and indicates the nature of the trouble. The specific details included are:

(a) Office name

(b) Date of tests

(c) Telephone number of the TTY machine assigned to the office under test

(d) Type of trouble

(1) Trunks exceeding immediate action limits (Q2s)

(2) Trunks exceeding maintenance limits (Q1s)

(3) Facilities experiencing troubles

(4) Trunks failing tests to operational test lines

(5) Trunks which could not be accessed or which could not be connected through to the far end test line

(e) Trunk group and facility identification

(f) Transmission testing parameters (transmission test only)

(g) ROTL priming information

(h) Test results.

3.02 In the case where a very large number of troubles occur in a single office, the corresponding Office Results will be produced in more than one section. Each section will contain each of the categories referenced in 3.01(d) and will be treated as a separate office as far as the office reports are concerned. However, the results contained in all sections are merged together in the applicable management summaries and index information reports.

3.03 The Office Results information is produced via the line printer (if available) and/or via the paper tape punch. A teleprinter copy is also generated when the corresponding punched paper tape is used to transmit Office Results data to a remote office via an off-line teleprinter.

A. General Format of Office Results Printouts

3.04 The following is a detailed explanation of the general format that applies to each of the different types of Office Results printouts described in 3.05 through 3.17. The printout of Trunks Exceeding Q2 Limits, shown in Fig. 2, will serve as an example in the general explanation. Circled line numbers are used to correlate the description with the corresponding line on the printout shown in Fig. 2 and do not appear in the actual report.

LINE NO. **DESCRIPTION**

ROTL Priming Information

(1) ROTL office name (RCMDCA1123J), date testing was completed (10/17/72), and the phone number of the associated off-line teleprinter for that office where the results are to be sent (TTY #9497000).

(2) Heading of the particular Office Results printout (which is TRUNKS EXCEEDING Q2 LIMITS in this example).

(3) Trunk group information including pulsing (M—), terminating office (BKLYCA01548), trunk type (DF551E), modifier, followed by the computer access code and control office name if referenced in the Trunk Maintenance Files (TMFs).

(4) Facility identification as listed in the TMF with all leading and embedded blanks suppressed (101T1BKLYCA01548).

Test parameters—expected measured loss (EML), loss deviation limit, noise maintenance

limit, and the noise immediate action limit, respectively (04.2, 1.5, 22, 30).

(5) For each trunk in the group specified in lines (3) and (4), there is a one-line entry containing ROTL priming information (13015), the traffic trunk number (1133), facility channel or pair number (01), initial disposition (Busy), final disposition (Ans), time of the final disposition (09:07), test result deviations in the order of far-to-near loss (+4.1), near-to-far loss (−0.4), near-end noise (−??), far-end noise (−??), and a Q Flag (Q2L1). For trunks not tested due to operational failures, there will be no test results listed. In this case "—? ?" for loss or "—??" for noise indicates a level below the measuring range of the ATMS equipment. Symbols such as "+? ?" for loss or "+??" for noise indicates a signal level above the measuring range of the ATMS equipment. The symbol "?—" indicates that no data signal was received for the measurement. For trunks failing tests due to operational test line failures, the results will be failure flags described in 3.13 and 3.14.

(6) The number of trunks successfully accessed and tested for the office on the current test run (347). This number indicates tests to either transmission or operational test lines but does not include trunks which were not actually accessed.

(7) The number of trunks prepared for testing for the office on the current test run.

B. Trunks Exceeding Q2 Limits

3.05 The report consisting of test results for all trunks in the office in which loss or noise measurements exceed the immediate action limits (Q2) is shown in Fig. 2. This report appears only if transmission tests were performed.

3.06 An immediate action condition occurs when:

(a) A loss measurement deviates from the EML by more than 3.7 dB

(b) A noise measurement exceeds the noise immediate action limit specified in the TMF.

The Q Flag assigned to trunks exceeding immediate action limits will be Q2 followed by an N for noise or an L for loss, followed by a 1 for near-end or far-to-near measurements or a 2 for far-end or near-to-far measurements.

3.07 If more than one measurement pertaining to a specific trunk exceeds the immediate action limit, the Q Flag will refer to the last measurement, but all test results will be shown. The trunks shown in the Q2 report should receive immediate attention.

C. Trunks Exceeding Q1 Limits

3.08 Figure 3 shows the report consisting of test results for those trunks in which loss or noise measurements exceed the maintenance limits (Q1) specified in the TMF but do not exceed the immediate action limits (Q2). This report appears only if transmission tests have been performed.

3.09 The Q Flag is a Q1 with the last two characters having the same meaning as in the Q2 report. Trunks listed in this report do not require immediate action, but should undergo analysis and corrective action as part of the office trunk and facility maintenance program.

D. Facility Analysis

3.10 Figure 4 shows the report listing facilities, rather than individual trunks, which may be experiencing trouble. This report appears only if transmission tests were performed.

3.11 The facility listed in the analysis report is the first facility out of the office as specified in the TMF. The analysis concerns only those channels of the facility which appear together in the TMF. When a facility trouble is diagnosed, the test results for all of the trunks on the facility will be included in the report.

3.12 The procedure used for determining a facility problem consists of flagging those facilities where three or more channels are tested and where more than half of those trunks assigned to the facility under test had results exceeding maintenance limits, experienced a permanent busy condition, or experienced a permanent high-and-dry condition. These are three independent conditions, so if 1/3 of the trunks were busy and 1/3 of the test results exceeded maintenance limits, the results will not be classified as a facility trouble.

E. Trunks Failing Operational Tests

3.13 The report of trunks failing tests to operational test lines (103-type synchronous and non-synchronous) is shown in Fig. 5. This report appears only if tests to operational test lines were performed.

3.14 This report lists five trouble indications:

T — Trip fail

R — Pretrip fail

F — Fail

O — Timing disconnect failure (SXS ROTL only)

X — Centrex transfer test failure.

Trip fail is diagnosed if the CAROT Controller receives six cycles of audible ringing. Pretrip fail is diagnosed if the CAROT Controller receives one cycle of audible ringing followed by a reorder tone (120 IPM). A fail indication when associated with a synchronous test line means that six bursts of 2225 Hz were not received within a 10-second interval. With a non-synchronous test line, fail indicates that four cycles of 2225 Hz were not received within a 6-second interval. A timing disconnect failure is indicated by 60 IPM low-tone which is returned from the ROTL upon receipt of the recycle command. Bursts of test progress tone (TPT) returned by the ROTL during operational test sequences correspond to off-hook supervision on the trunk under test. A Centrex transfer test failure is indicated by the fact that 60 IPM is not returned within 8 seconds of the beginning of the Centrex transfer test.

F. Trunks Not Tested

3.15 Trunks not tested because of operational troubles during testing, as described in 3.01(d)(5), are listed in the report shown in Fig. 6.

3.16 Dispositions that will cause trunks to be reported as not tested include (refer to timing charts for further explanation):

Busy (BUSY)

High and dry (H&D)

Voice announcement (VA)

Audible ring (AR)

Reorder (RO)

Delayed reorder (DRO)

Broadband (BB)

Far end busy (FEBY)

No answer supervision received (NOAS)

Bad trunk (BDTK).

3.17 When two different dispositions are listed for a trunk, the final disposition is used in categorizing the trunk test results. When an individual trunk experiences one of the conditions listed in 3.16 as a permanent condition, the cause may be attributed to a trunk trouble or to a data base error. A high and dry disposition is most often the result of a trunk trouble and is considered a Q2 report. When groups of trunks experience operational troubles, the cause may be attributed to data base errors or to a hardware problem in the ROTL.

4. CAROT CENTER RESULTS

4.01 The reports designated as CAROT Center Results contain information related to ATMS equipment and ROTL troubles as well as summaries of testing results. These reports are produced via the line printer or paper tape punch.

4.02 The various reports comprising CAROT Center Results are as follows:

CAROT Operational Summary: This report contains information on the performance of ATMS equipment and on the CAROT Controller status.

CAROT Management Summary: This report provides a listing composed of 13 peg counts concerning operational, transmission, and other related categories applicable to trouble situations normally encountered with trunk testing functions. The information provided is accumulated over a predetermined period and is produced via the Report Program.

Daily Management Summary: This report contains the same information as the CAROT Management Summary except it is produced on a daily basis along with the Office Results reports previously explained.

Index Information Report: This report contains data accumulated for computation of the TTMI. Results are based on deviations from specified loss limits and noise measurements exceeding maintenance and immediate action limits.

4.03 The Report Program provides a means for obtaining original copies of the Management Summary, the Index Information Report, and additional copies of the Daily Management Summary via the line printer or paper tape punch. This program is called into operation via the Monitor Program.

4.04 The Dump Program is used to obtain all test results contained in the test file for a selected ROTL office, trunk group, or a single port as compiled during the previous night's testing. The contents of the resultant output (via the paper tape punch or line printer) can be used as an aid to diagnose trunk group or facility troubles as well as a means for obtaining ROTL priming information for trunks represented in the test file.

A. CAROT Operational Summary

4.05 The CAROT Operational Summary (see Fig. 7) is used to report on the performance of the CAROT Controller, associated ATMS equipment, ROTLs, responders, and test lines. This report is one of the reports comprising the CAROT Center Results.

4.06 The report is arranged with trouble indications listed according to ROTL offices with one ROTL office being represented on a single page. The trunk group, facility information, and (if applicable) the trunk identification are presented along with each trouble indication.

4.07 The CAROT Operational Summary is produced on the line printer (if included in the system). If the line printer is not provided, the summary will automatically be punched on paper tape for listing on an off-line teleprinter.

4.08 ***ROTL Office Information:*** The ROTL related information presented in the CAROT Operational Summary appears at the top of the page for each office tested during the routine test run. All troubles related to testing from the given ROTL will follow the one-line heading. A detailed decription of ROTL office information is given in 4.12.

4.09 ***Trunk Group Related Troubles:*** Trunk group related troubles are indicated in the CAROT Operational Summary report along with the trunk group and facility information and test parameters. A listing of these troubles is given in Table C. When ATMS responder self-check failures are encountered, the self-check results as well as the appropriate diagnostic message are listed. A detailed description of trunk group related troubles is given in 4.12.

4.10 ***Trunk Related Troubles:*** Individual trunk troubles caused by associated equipment failures are identified by presenting trunk group information (referenced in 4.09) along with ROTL priming information, trunk numbers, channel or cable pair numbers, time of attempted test, and test results obtained, if any. These items are explained further in 4.12. Trunk messages, dispositions, and Q Flags reported in the CAROT Operational Summary are shown in Table D. For more information regarding individual trunk dispositions, refer to Section 010-410-314.

4.11 ***Quantity of Trunks Tested:*** The Operational Summary includes figures representing quantities of trunks actually tested to transmission or operational test lines as well as the amount of trunks that was prepared for testing. The amount of trunks tested includes only those trunks on which a test was actually performed. This summary does not include figures for trunks that were not accessed due to operational troubles such as BUSY, H&D, RO, etc. The figure for the number of trunks prepared represents the total number of trunks selected from the TMF for the indicated office. Further details regarding the number of trunks tested are given in 4.12

4.12 The following is a detailed description of the CAROT Operational Summary shown in Fig. 7. Circled line numbers are used to correlate the description with the corresponding line of the summary shown in Fig. 7 and do not appear in the actual printout.

LINE NO. DESCRIPTION

Trunk Group Related Troubles

(1) ROTL office identity (RCMDCA1123J), date (12/14/72), ROTL initial disposition (ANS), ROTL final disposition (ANS), time of last disposition (Ø5:19), number of reaccesses on the first test pass (RAØØ), and the ROTL telephone number (2370040).

(2) This diagnostic message denotes failure of self-checks for the ATMS responder associated with the ROTL referenced in line (1).

(3) Responder self-check results (reading from left to right), loss deviation from value established during alignment of ROTL responder, and loss deviation at the 105 test line responder deviation (+Ø.Ø,?,−Ø1,?). In this case, "?" indicates no measurement reading was obtained. A data receiver time-out is indicated by XXXX. When a malfunction occurs during a self-check measurement on a 105 test line and no data signal is received within 4 seconds of the self-check command, the data receiver times out.

(4) Trunk group information including pulsing (M—), terminating office (BKLYCAØ184J), trunk type (DF55IE), modifier ( ), computer access code (F5190099), control office name (RCMDCA11ZØ).

(5) Facility identification as listed in the TMF with all leading and embedded blanks suppressed (A22H88ALBYCA11)

Test parameters including expected measured loss (EML), loss deviation limit, noise maintenance limit, and noise immediate action limit, respectively (Ø5.1, 1.5, 2Ø, 36).

Trunk Related Troubles

(6) Trunk group information. Similar to (4).

(7) Facility identification. Similar to (5).

(8) ROTL priming information (K00810038450037S), trunk number (ØØØ2), channel or cable pair number (ØØ326), initial disposition (BUSY), final disposition [(BDFE)-bad far-end recorded due to data receiver time-out], time of final disposition (Ø5:19), test result deviation in the order of far-to-near loss (+?.?), near-to-far loss (?), near-end noise (−??), far-end noise (?), data receiver time-out occurred during last measurement sequence (XXXX).

Disc or Program Format Troubles

(9) Possible trouble with disc unit or format error in applicable CAROT Program. In this case an attempt was made to index 4-wire trunks measured in only one direction resulting in message (OTHER THAN 1Ø5 TYPE TEST LINE ON CARRIER TRUNKS).

(10) Trunk group information. Similar to (4).

(11) Facility information. Similar to (5).

Testing Summary

(12) Number of trunks tested to transmission or operational test lines (TRUNKS TESTED =214).

(13) Number of trunks prepared for testing (TRUNKS PREPARED FOR TESTING = 226).

B. Management Summaries

4.13 Two types of summaries of routine test results concerning the trunk status of individual offices are available for periodic reports to upper management. The CAROT Management Summary covers a predetermined period (weekly, biweekly, or monthly, etc) and is produced via the Report Program. The Daily CAROT Management Summary is produced automatically at the end of a day's testing via the Analysis Program. The format of each summary is nearly identical.

4.14 Results of the testing are listed into numerical counts for the following ten categories:

1. Number of trunks tested to transmission test lines
2. Number of trunks exceeding loss maintenance limit
3. Number of trunks exceeding noise maintenance limit

4. Number of trunks exceeding the loss immediate action limit

5. Number of trunks exceeding the noise immediate action limit

6. Number of trunks tested to operational test lines

7. Number of trunks failing tests to operational test lines

8. Number of trunks permanently busy (operational and transmission tests)

9. Number of trunks permanently high and dry (operational and transmission tests)

10. Number of trunks not tested due to other causes (including reorder, dial tone, voice announcement, audible ring, delayed reorder, milliwatt, test progress tone, parking circuit time-out, pretrip failure, far end busy, and no answer supervision from far end). Refer to Section 010-410-314 for a detailed description of these dispositions (operational and transmission tests).

Corresponding headings for all of these categories appear at the top of each summary sheet.

CAROT Management Summary

4.15 The information presented in this summary is a per-ROTL office tabulation of total incurrences in each of the indicated test categories (see Fig. 8). The information can be accumulated over a designated period of time which may be weekly, biweekly, monthly, or whatever interval specified by the CAROT Center. The summary can be produced on the line printer or paper tape punch using the procedures outlined for the Report Program described in Part 5.

CAROT Daily Management Summary

4.16 The information presented in this summary (see Fig. 9) is the same as is given in the Management Summary with two exceptions. First, the data listed is for the current run of the Analysis Program only. Secondly, this summary includes the total number of trunks prepared for testing. The Daily Summary is automatically produced via the line printer (if available) or paper tape punch (if line printer is not available) by the Analysis Program upon completion of the analysis for all ROTL offices. Additional copies of the summary can be produced using the procedures given for the Report Program described in Part 5.

Index Information Report

4.17 The CAROT Analysis Program is capable of accumulating information for computation of the TTMI. ***The CAROT Controller does not compute the index, but rather provides data for the computation of the index by the responsible organization.*** Form E6439 (Fig. 10) is the summary of the TTMI information and is prepared as outlined in Section 010-410-300.

4.18 The index information is compiled from the accumulated test data using the Report Program procedures described in Part 5, and is presented in the format shown in Fig. 11. This information may be produced on the line printer, listing one office per page, or on the paper tape punch.

4.19 The data can be accumulated over any interval desired by the CAROT Center. This interval is independent of the interval assigned to the Management Summary. The indexing information is provided on a per-office basis with the trunks classified as carrier, V-repeater, E-repeater, or non-gain. E-repeater and non-gain trunks are subdivided by results for testing to 102- or combined 100- and 105-type test lines. This subdividing procedure is used because the results are based on the number of measurements rather than on the number of trunks since a different number of measurements is produced depending on the type of test line used. There is no such subdivision taking place with carrier and V-repeater trunks since these are 4-wire facilities and must be tested in both directions, implying the use of a 105-type test line. Test results are included in the summary only if the trunks were flagged for indexing at the time the test files were prepared and the Test Program was initialized to include index information results. The index count mode, when selected, scans the TMF and the test line directory and prints the number of trunks in each of six categories (see Section 010-410-314).

4.20 ***Loss Deviations From EML:*** Deviations obtained during loss measurements are divided into the following three categories:

(a) Deviations greater than 0.7 dB but less than or equal to 1.7 dB.

(b) Deviations greater than 1.7 dB but less than or equal to 3.7 dB.

(c) Deviations greater than 3.7 dB.

Deviations less than or equal to 0.7 dB are not shown directly.

4.21 Each measurement is counted for the number of actual measurements: ie, a 105-type test line produces two loss measurements whereas a 102-type test line produces only one loss measurement per trunk. For 2-wire facilities, the combined 100-type test line measurements are treated like 105-type measurements by counting the 100-type measurement twice. Each time a trunk is tested to a combined 100- or 105-type test line, two measurements are counted for the total measurements per trunk, whereas for a 102-type test line, one measurement per trunk is counted if the trunk involved was flagged for index purposes.

4.22 ***Noise Measurements:*** This type measurement is performed only by 100- and 105-type test lines. One count is kept for measurements exceeding the noise maintenance limit (Q1), but not exceeding the noise immediate action limit (Q2), and a second count is kept for only those measurements exceeding the noise immediate action limit (Q2). The total number of noise measurements includes two counts for each trunk measured to a 100- or 105-type test line.

5. REPORT PROGRAM

5.01 The Report Program is used for producing paper tape or line printer copies of the Management Summary and Index Information Report. In addition, copies of the Daily Management Summary may be obtained as desired. Data for each of these reports is stored in a disc file which is updated with each analysis of routine trunk test results. The output information obtained using the Report Program is produced in two different forms designated as CAROT Center and Office Output formats.

5.02 The CAROT Center format produces the Daily Management and Management summaries using the format listing of seven offices per page on the line printer. No leader is provided between offices when punched paper is produced.

5.03 The Office Output format prints out management summary information by listing only one office per page and produces leader between individual offices on the punched paper tape. This form should be used if results are to be distributed to individual offices.

5.04 When index information is requested, only one office is represented on each page regardless of the format specified (ie, Office Output or CAROT Center). However, for index information, the punched paper tape output in the CAROT Center format has no leader between individual offices whereas the Office Output does.

A. Operating Procedure

5.05 The operating procedures for the Report Program are given in Table E.

B. Diagnostic Messages

5.06 Diagnostic messages with appropriate explanations pertaining to the Report Program are listed in Table F. These messages are produced on the system teleprinter when related trouble conditions are encountered.

6. DUMP PROGRAM

6.01 The purpose of the Dump Program is to make part or all of the results stored in the test file available for evaluation. The desired information can be obtained via the line printer or paper tape punch (or teleprinter in the event the CAROT Controller is not equipped with a line printer). The information derived can then be used to diagnose trunk group or facility troubles by observing all test results (both in-tolerance and out-of-tolerance readings) rather than just those reported as troubles by the Analysis Program in the office reports. A dump of the test file can also be used as a source of ROTL priming information for particular trunks when using the Implemented Interrogator Diagnostics Program as a troubleshooting tool according to procedures outlined in Part 6 of Section 103-251-300. A listing

of Dump Program diagnostic messages along with appropriate operator responses is shown in Table G.

A. Operating Procedures

6.02 Procedures for implementing the Dump Program from the Monitor Program are given in Table H.

B. Output Variations

6.03 The Dump Program can be used to produce a copy of the test file (including test results) of a selected ROTL office, trunk group, or a single port. The data is presented for each ROTL office by starting a new page on the line printer or by spacing feedholes on the punched paper tape output.

6.04 The ROTL office information is the first data presented for all three of the outputs (ROTL office, trunk group, and port). When requesting information related to the ROTL office or trunk group, it is only necessary to enter the number of characters needed to uniquely identify the desired trunks. For example, if only one office in the test file had a common language entity designation beginning with the letter R, the operator could select this office simply by typing R, carriage return CR , and line feed LF , in response to the request for the office name.

6.05 When requesting information related to a trunk group, the operator must enter the common language trunk group identity as it appears in the TMF, including originating entity, pulsing, terminating entity, trunk type, and modifier. Again only as many characters as needed to uniquely identify the trunk group in the test file are required.

C. Output Formats

6.06 The test file contains three types of records. These are ROTL office, test group (subset of a trunk group), and trunk records. There is one ROTL office record for each originating office tested, one or more test group records for each trunk group, and one trunk record for each trunk tested. These records are shown in the typical Dump Program printout shown in Fig. 12.

6.07 The format of the Dump Program printout is divided into the following major parts.

ROTL Office Record: This is the first entry in the Dump Program printout and consists of an identification character, ROTL-type information, ROTL telephone number, initial and final ROTL dispositions, date and time, reaccess count, originating entity, and control office TTY number. This is a single-line entry.

Test Group Record: This is a 3-line entry consisting of test parameters, self-check results, trunk group identification, and facility information. Each new trunk group will cause a test group record to be entered in the file with a "#" as the first character of the record. When new test parameters or a new facility is encountered within a trunk group, a test group record will be entered in the test file, but the first character will be an "!," indicating to the test program that it is not necessary to perform another ATMS self-check since the same far-end equipment is being used.

Trunk Record: This is a series of single line trunk records that follows the test group record. Each trunk entry begins with an "&" character followed by ROTL priming information, the trunk traffic number, facility channel or cable pair number, trunk initial and final disposition, date and time of final disposition, test results, and a Q Flag indication, if pertinent. For further details regarding ROTL priming information and test code values, refer to Tables I, J, and K.

6.08 A typical printout of the Dump Program is shown in Fig. 12. The following is a detailed description of the information entered in the printout as referenced to Fig. 12. Circled line numbers are used to correlate the description with the corresponding line appearing in the figure and do not appear in the actual printout.

LINE NO.	DESCRIPTION
(1)	This line contains the following ROTL Office Record Information:
	Identification character for beginning of data for a ROTL office ($).

(1) 2-character ROTL type, in this case meaning expanded step-by-step (SS).

ROTL telephone number (9415223ØØ7Ø).

8-character initial and final ROTL dispositions including 2 spaces (ANS ANS).

10-character date and time (1218721329).

4-character reaccess count for the first test pass (RAØØ).

11-character originating entity (ELSBCA1122C).

Control office TTY telephone number (9415222 1Ø33).

(2) This line contains the following Test Group Record information:

The first character of the test group, (#). When the first character appears as an "!," this indicates a test group record with new test parameters or a new facility. The test group record will be entered in the test file with the first character being "!," indicating to the Test Program that it is not necessary to perform another ATMS self-check since the same far-end equipment is being used. See line (7).

The character "T" or "O" indicates a transmission or operational test.

Type of test line (5), as listed below:

5—105

2—102

0—100

S—Synchronous

N—Non-synchronous

3—103

Test pad loss (Ø). Ø is Ø dB and 2 is 2 dB.

Trunk impedance (9). 9 for 900Ω, 6 for 600Ω.

(2) Space, EML, loss maintenance limit, noise maintenance limit, noise immediate action limit (02.8 1.5 28 36).

Audible ring flag (may be blank) 1A or 2A, indicating number of audible rings or voice announcements encountered in the group (1A).

Self-check results, F/N loss, N/F loss, NE noise, FE noise (only if new trunk group, blank otherwise), (+Ø.1+Ø.Ø+ØØ+ØØ).

(3) This line contains additional Test Group Record information:

First character (1), indicates index code as listed below:

Ø—Do not index

1—Carrier trunk index

2—E-type repeater index

3—V-type repeater index

4—Non-gain index

Trunk group common language identity (ELSBCA1122CM-BKLYCAØ164CDF551E).

Computer access code (F51ØØ037).

Control Office identity (ELSBCA11ZØ).

(4) This line contains additional Test Group Record information:

Facility identification with all leading and embedded spaces removed (this field can contain up to 34 characters), (14T1BKLYCAØ1).

(5) This line contains the following Trunk Record information:

Indicates beginning of trunk record (&).

ROTL priming information, up to 29 characters (K0541ØØ3642ØØ37S). (See Table I).

(5) 9-character field consisting of the trunk traffic number and facility channel number (ØØØ4 24).

5 Space, trunk initial and final disposition (ANS). Another typical entry could be BUSY.

5 10-character date and time (1218721319).

5 Test result deviations, (-Ø.4-Ø.4-??-??), in the order of: far-to-near loss (-Ø.4), near-to-far loss (-Ø.4), near-end noise (–??), far-end noise (—??). The symbols "—? ?" for loss or "—??" for noise indicate a level below the measuring range of the ATMS equipment. Symbols such as "+? ?" for loss or " +??" for noise indicate a signal level above the measuring range of the ATMS equipment. The symbol "?—" indicates that no data signal was received for the measurement.

(5) The Q flag—(No entry in this printout). For immediate action will be Q2 followed by an N for noise or L for loss, followed by a 1 for near-end or far-to-near measurements or a 2 for far-end or near-to-far measurements.

The Q flag—For maintenance limits will be Q1 followed by two identifying characters as described above for Q2 limits.

(6) Description for line (6) is the same as for line (5) except for quotation mark (") appearing at the end. This indicates that this is the last trunk of the test group in the file.

(7) Description for line (7) is the same as for line (5) except for the "at" symbol (@) appearing at the end of the line. This symbol indicates the last trunk in the ROTL office file.

```
MONITOR RUNNING!
PROGRAM NAME (OR "LIST"): ANALYSIS

ANALYSIS PROGRAM IS RUNNING.

THE FOLLOWING PORTS HAVE BEEN TESTED.
    1   4
ARE  ALL  PORTS  TO  BE  ANALYZED?  YES

PUNCH OUTPUT?  NO

INCLUDE RESULTS IN MANAGEMENT SUMMARY?  YES

START OF NEW INTERVAL?     YES

INCLUDE RESULTS IN INDEX REPORT?  YES

START OF NEW INTERVAL?  NO

    1    ELSBCA1122C  12/18/72   TTY   # 94152221Ø33
    2    RCMDCA1123J  12/18/72   TTY   # 94152355351
MONITOR RUNNING!
PROGRAM NAME (OR "LIST"):
```

Fig. 1—Typical TTY Printout of Manual Initialization of Analysis Program

RCMDCA1123J (OFFICE) 10/17/72 (DATE) TTY #9497000 (OFFICE TTY NUMBER)

TRUNKS EXCEEOING Q2 LIMITS

PULSING	TERM. OFFICE	TRUNK TYPE	MODIFIER	COMPUTER ACCESS CODE	CONTROL OFFICE
M –	BKLYCA01548	DF551E	-----	----------	----------

FACILITY	TEST PARAMETERS			
101T1BKLYCA01548	04.2	1.5	22	30

ROTL PRIMING	TRK NO.	CHAN NO.	INIT DISP	FINAL DISP	TEST RESULTS TIME	F/N/L	N/F/L	N-E_N	F-E_N	Q FLAG
13015	1133	01	BUSY	ANS	09:07	+4.1	–0.4	–??	–??	Q2L1

PULSING	TERM. OFFICE	TRUNK TYPE	MODIFIER	COMPUTER ACCESS CODE	CONTROL OFFICE
M –	OKLDCA0346C	HU551E			

FACILITY	TEST PARAMETERS			
101T1OKLDCA0346C	04.2	1.5	22	30

12117	1051	02	ANS		10:03	–0.3	+0.4	+21	–??	Q2N1

PULSING	TERM. OFFICE	TRUNK TYPE	MODIFIER	COMPUTER ACCESS CODE	CONTROL OFFICE
M –	BKLYCA164CO	OF551E			

FACILITY	TEST PARAMETERS			
101T1BKLYCA0164C	04.2	1.5	22	30

13114	1097	01	ANS		10:45	+0.2	+4.6	–??	–??	Q2L2
12016	1098	02	ANS		10:46	–0.1	+0.5	–??	+12	Q2N2
12109	1099	03	ANS		10:47	–0.1	+0.5	–??	+13	Q2N2

PULSING	TERM. OFFICE	TRUNK TYPE	MODIFIER	COMPUTER ACCESS CODE	CONTROL OFFICE
M –	ALBYCA1152E	HU551E			

FACILITY	TEST PARAMETERS			
101T1ALBYCA1152E	04.2	1.5	22	30

13026	1013	02	ANS		09:30	+4.2	–0.4	–??	–??	Q2L1
13022	1014	03	ANS		09:31	+4.3	–0.4	–??	–??	Q2L1
11126	1015	04	ANS		09:32	+4.4	–0.4	–??	–??	Q2L1
12011	1016	05	ANS		09:33	+4.5	+4.5	–??	–??	Q2L2
11211	1017	06	ANS		09:33	+4.6	+4.6	–??	–??	Q2L2

PULSING	TERM. OFFICE	TRUNK TYPE	MODIFIER	COMPUTER ACCESS CODE	CONTROL OFFICE
M –	ALBYCA1152E	HU551E			

FACILITY	TEST PARAMETERS			
101T1ALBYCA1152E	04.2	1.5	22	30

12171	1147	03	ANS		08:20	+4.5	–0.4	–??	–??	Q2L1
13412	1148	04	ANS		08:19	+0.3	+0.4	+23	–??	Q2N1

TRUNKS TESTED = 347
TRUNKS PREPARED FOR TESTING = 355

Q FLAG TABLE
Q2L1 – FAILED Q2 ON FAR TO NEAR LOSS
Q2L2 – FAILED Q2 ON NEAR TO FAR LOSS
Q2N1 – FAILED Q2 ON NEAR ENO NOISE
Q2N2 – FAILED Q2 ON FAR END NOISE

Legend

INFORMATION – APPEARS ON PRINTOUT

IDENTIFICATION – DOES NOT APPEAR ON PRINTOUT

Fig. 2—Typical Results for Trunks Exceeding Immediate Action Limits (Q2)

MLVYCA0138E 03/31/72 TTY #3830099
OFFICE DATE OFFICE TTY NUMBER

TRUNKS EXCEEDING Q1 LIMITS

M – OKLDCA0100T HU551E ---- ---------- ----------
PULSING TERM. OFFICE TRUNK TYPE MODIFIER COMPUTER ACCESS CODE CONTROL OFFICE

253N10KLDCA01 03.2 1.5 23 30
FACILITY TEST PARAMETERS

					TEST RESULTS					
ROTL PRIMING	TRK NO.	CHAN NO.	INIT DISP	FINAL DISP	TIME	F/N/L	N/F/L	N-E_N	F-E_N	Q FLAG
K052360344410509F	5010	8	BUSY	ANS	01:22	–0.2	–0.6	+04	+00	Q1N1
M – OKLDCA0100T HU551E										
251N10KLDCA01 03.2 1.5 23 30										
K050360344410505	5104	8		ANS	01:23	–0.2	–0.6	+03	–01	Q1N1
K052560344410505	5105	9		ANS	01:23	+1.1	–0.8	+05	+01	Q1N2
K053660344410505	5106	10		ANS	01:23	+1.7	–2.0	+02	+01	Q1N2
K053760344410505	5108	12		ANS	01:24	+1.7	–2.0	+02	+01	Q1N2
K053860344410505	5110	6		ANS	01:24	+1.7	–2.0	+02	??	Q1N2
M – OKLDCA0100T HU551E										
252N10KLDCA01 03.1 1.5 23 30										
K052860344410505	5111	5		ANS	01:25	+0.1	+0.0	+05	–01	Q1N1

TRUNKS TESTED = 347
TRUNKS PREPARED FOR TESTING = 355

Legend

INFORMATION – APPEARS ON PRINTOUT

IDENTIFICATION – DOES NOT APPEAR ON PRINTOUT

Fig. 3—Typical Results for Trunks Exceeding Maintenance Limits (Q1)

```
MLVYCA0138E     03/31/72     TTY # 3830099

FACILITY ANALYSIS

M –          OKLDCA0100T   AF5OMT

253N1OKLDCA01    03.2   1.5  23   30
K05236034441050S                5101   8   Ans   01:22   –0.6  –0.7  +04   +01   Q1N2

K05246034441050S                5104   8   Ans   01:23   –0.2  –0.6  +03   –01   Q1N1

M –          OKLDCA0100T   AF5OMT

251N10KLDCA01    03.2   1.5  23   30
K05036034441050S                5104   8   Ans   01:23   –0.2  –0.6  +03   –01   Q1N1

K05256034441050S                5105   9   Ans   01:23   +1.1  –0.8  +05   +01   Q1N2

K05366034441050S                5106   10  Ans   01:23   +1.7  –2.0  +02   +01   Q1N2

K05266034441050S                5107   11  Ans   01:23   –1.1  –0.1  –04   +00

K05376034441050S                5108   12  Ans   01:24   +1.7  –2.0  +02   +01   Q1N2

K05276034441050S                5109   5   Ans   01:24   –1.2  –0.1  –02   –01

K05386034441050S                5110   6   Ans   01:24   +1.7  –2.0  +02   +04   Q1N2

TRUNKS TESTED =  347
TRUNKS PREPARED FOR TESTING = 355
```

Fig. 4—Typical Results for Facility Analysis Report

```
SSLTCA11332     00 / 00 / 00      TTY  #   941533200700

TRUNKS FAILING OPERATIONAL TESTS.

M-  LRKSCA1192C9300030
NONE

20079                          1    ANS     00:01  T

21079                          2    ANS     00:01  T

TRUNKS TESTED =          6
TRUNKS PREPARED FOR TESTING  = 10
```

Fig. 5—Trunks Failing Tests to Operational Test Lines

RCMDCA1123J 12/24/70 TTY #9497000
OFFICE DATE OFFICE TTY NUMBER

TRUNKS NOT TESTED

M – PULSING	TERM. OFFICE	TRUNK TYPE	MODIFIER	COMPUTER ACCESS CODE	CONTROL OFFICE
101T1BKLYCA01548	04.2 1.5 22 30				
FACILITY	TEST PARAMETERS				
K0538603444105S	1005	06	H&D	H&D	09:22
ROTL PRIMING	TRK NO.	CHAN NO.	INIT DISP	FINAL DISP	TIME OF LAST TEST
M –	ELSBCA1122C	DF551E			
101T1ELSBCA1122C	04.2 1.5 22 30				
K053660344441050S	1024	01	BUSY	BUSY	09:38
M –	ALBYCA1152E	HU551E			
101T1ALBYCA1152E	04.2 1.5 22 30				
K0538603444105OS	1062	01	RO	RO	10:13
K052660344441050S	1068	07	BUSY	BUSY	10:19
M –	ALBYCA1152F	DF551E			
101T1ALBYCA1522F	04.2 1.5 22 30				
K052760344441050S	1078	06	H&D	H&D	10:27
K052560344441050S	1088	04	BUSY	BUSY	10:36
K053760344441050S	1094	10	BUSY	BUSY	10:42
M –	BKLYCA164CD	DF551E			
101T1BKLYCA0164C	04.2 1.5 22 30				
K052460344441050S	1107	11	DT	DT	10:54

TRUNKS PREPARED FOR TESTING = 355

Legend

INFORMATION – APPEARS ON PRINTOUT

IDENTIFICATION – DOES NOT APPEAR ON PRINTOUT

Fig. 6—Typical Operational Report

CAROT OPERATIONAL SUMMARY

(1) RCMDCA1123J 12/14/72 ANS ANS Ø5:19 RAØØ 2370040

(2) SELF CHECK FAILURE.

(3) +Ø.Ø ? –Ø1 ? XXXX

(4) M– BKLYCAØ184JDF551E F5190099 RCMDCA11ZØ

(5) A22H88ALBYCA11 Ø5.1 1.5 20 36

(6) M– BKLYCAØ184JDF551E F5100099 RCMDCA11ZØ

(7) A22H88ALBYCA11 Ø5.1 1.5 20 36

(8) KØØ810038450037S ØØØ200326, BUSY BDFE Ø5:19 +?.? ? –?? ?XXXX

(9) OTHER THAN 105 TEST ON CARRIER TRUNKS

(10) M– OKLDCA1256CPH551E F5190063 RCMDCA11ZØ

(11) 102T10KLDCA04 04.0 1.5

(12) TRUNKS TESTED = 214

(13) TRUNKS PREPARED FOR TESTING = 226

Fig. 7—Typical CAROT Operational Summary

CAROT MANAGEMENT SUMMARY

09/17/74 TO 09/19/74

TEST		BUSY	H&D	OTHER	Q1L	Q1N	Q2L	Q2N	OP-FAIL
ATLNGADE37A	–	TRANSMISSION							
OFFICE NAME		TEST TYPE							
2		1	0	0	2	0	0	0	
TOTAL TESTS		TOTAL BUSY							
GNBONCEU27C	–	TRANSMISSION							
6		6	0	0	0	0	0	0	
MIAMFLOL68A	–	TRANSMISSION							
12		0	0	0	0	3	0	0	
RCMDVAPEMG0	–	TRANSMISSION							
9		3	0	0	0	0	0	0	
RDCYCA0136C	–	OPERATIONAL							
6		6	0	0					0
RDCYCA0136G	–	TRANSMISSION							
1		1	0	0	0	0	0	0	
SNFCCA0398C	–	OPERATIONAL							
49		73	0	0					2
SNFCCA0500T	–	TRANSMISSION							
0		0	0	0	0	0	0	0	
VLLJCA0164C	–	TRANSMISSION							
134		60	0	1	3	0	3	0	

Legend

INFORMATION – APPEARS ON PRINTOUT

IDENTIFICATION – DOES NOT APPEAR ON PRINTOUT

Fig. 8—Typical CAROT Management Summary

CAROT MANAGEMENT SUMMARY

09/08/74

TEST	PREP	BUSY	H&D	OTHER	Q1L	Q1N	Q2L	Q2N	OP-FAIL
RDCYCA0136C	–	TRANSMISSION							
25	54	1	2	11	3	0	0	0	
SNFCCA0500T	–	TRANSMISSION							
47	110	32	0	1	1	1	1	0	
VLLJCA0164C	–	TRANSMISSION							
0	85	1	0	0	0	0	0	0	

Fig. 9—Typical Daily CAROT Management Summary

FORM E-6439 (4/74)

TRUNK TRANSMISSION MAINTENANCE INDEX
MANUAL SUMMARY – CAROT

Office Name

Start Date to End Date

					Loss Deviations				Noise Deviations			
Line	Number of Trunks	Type	Fac	Freq	.7	1.7	3.7	L Meas	Q1 N	Q2 N	N Meas	No. of Trunks Noise (Typ 9)
	A	B			C	D	E	F	G	H	I	N
Total												

Type	Fac	Freq	% Exceeding .7 C+D+E ÷ F x 100	% Exceeding 1.7 D+E ÷ F x 100	% Exceeding 3.7 E ÷ F x 100	% Measurements Made *
B			J	K	L	M

TTMI – Manual Loss Summary
BSP 301-121-500

TTMI – Manual Noise Summary
BSP 301-122-500

* % Measurements Made

Type 8 – F ÷ 3A x 100

Type 9 – F ÷ 6A x 100

Fig. 10—Form E-6439

TRUNK TRANSMISSION MAINTENANCE INDEX

INFORMATION FROM 04/09/74 TO 07/03/74

OFFICE NAME TYP, FAC, FRQ	.7	1.7	3.7	L MEAS	Q1N	Q2N	N MEAS
RDCYCA0136C							
9 10 10	8	0	0	158	0	0	158
9 10 20	0	0	0	0	0	0	0
9 05 20	0	0	0	0	0	0	0
9 05 30	0	0	0	0	0	0	0
8 05 20	0	0	0	0	0	0	0
8 05 30	0	0	0	0	0	0	0

Legend

TYP – 9 – CAROT TO 105
8 – CAROT TO 102
FAC – 10 – CARRIER OR V-TYPE REPEATER
05 – E-TYPE REPEATER OR NON-GAIN
FRQ – 10 – WEEKLY
20 – SEMIMONTHLY
30 – MONTHLY

Fig. 11—Typical Trunk Transmission Maintenance Index Information Report

```
(1)  $SS 94152230070 ANS   ANS   1218721329RA00ELSBCA1122C 94152221033
(2)  #T509   02.8   1.5    2.8    361A+0.1+0.0+00+00
(3)  1ELSBCA1122CM-BKLYCA0164CDF55IE   F5100037      ELSBCA11Z0
(4)  104T1BKLYCA01
(5)  &K05410036420037S        0004    24    ANS      1218721319-0.4-0.4-??-??
     &K05460036420037S        0005    23    ANS      1218721320-0.5-0.2-??-??
     &K05530036420037S        0006    22    ANS      1218721320-0.4-0.5-??-??
(6)  &K05530036420037S        0007    21    ANS      1218721320-0.4-0.1-??-??'
     !T509 02.8   1.5  28   36
     1ELSBCA1122CM-BKLYCA0164CDF55IE   F5100037      ELSBCA11Z0
     101T1BKLYCA01
     &K05110036420037S        0008    19    BUSYANS  1218721324-0.9-0.4-12-??
     #T509   02.8   1.5  28   36  +0.0+0.0+00+00
     1ELSBCA1122CM-BKLYCA0184JDF55IE   F5100015      ELSBCA11Z0
     101T1BKLYCA01
     &K05160038450037S        0012    24    BUSYANS  1218721326-0.3+0.1-10-??
     #T509   05.2   1.5  23   301A+0.0+0.0+00-01
     1ELSBCA1122CM-CNCRCA0100TAF50T0   F5100060      ELSBCA11Z0
     2N2CNCRCA01
     &K0574703682105S         0701    3     ANS      1218721321-0.4-0.9-06-??
     &K0510703682105S         0702    4     BUSYBUSY 1218721329
     &K0524703682105S         0703    5     BUSYBUSY 1218721330
     &K0540703682105S         0704    6     ANS      1218721322-1.1-0.6-05-??
     &K0553703682105S         0705    7     ANS      1218721322-0.4-1.1-04-??
     &K0507703682105S         0706    8     BUSYBUSY 1218721330
     &K0558703682105S         0707    9     BUSYANS  1218721328-1.3-0.6-02-??
     &K0594703682105S         0708    10    BUSYVA   1218721329
(7)  &K0541703682105S         0709    11    ANS      1218721323+1.2-1.0-05-??@
```

Fig. 12—Typical Dump Printout of Test File

TABLE A

ANALYSIS PROGRAM MANUAL INITIALIZATION DIALOGUE

STEP	PROGRAM MESSAGE	OPERATOR REPLY	COMMENTS AND ACTION
1.	MONITOR RUNNING! PROGRAM NAME (OR "LIST"):	ANALYSIS (CR) (LF)	This message is printed on the teleprinter while the Monitor Program is running. To call in the Analysis Program, the operator types in "ANALYSIS" in reply to the Monitor Program message. Carriage Return, (CR), and Line Feed, (LF), are operator actions for completing the reply.
2.	ANALYSIS PROGRAM IS RUNNING		This message indicates that the Analysis Program has been called in and is ready to begin with the initialization dialogue.
3.	THE FOLLOWING PORTS HAVE BEEN TESTED 1 2 3 4		The program informs the operator which ports have been prepared for testing. The numbers 1, 2, 3, and 4 represent the specific ports prepared for testing.
4.	ARE ALL PORTS TO BE ANALYZED?	YES or NO (CR) (LF)	To include all ports in the analysis of test results, type the reply "YES", and proceed to Step 6. To select specific ports to be included in the analysis while excluding others, type the reply "NO" and continue with Step 5.
5.	ANALYZE PORT XX: YES OR NO? PORT 1:	YES or NO (CR) (LF)	The number of each prepared port will be printed. The operator should respond with a "YES" or "NO" as desired for each port.
6.	PUNCH OUTPUT?	YES or NO (CR) (LF)	Answer YES if paper tape output from the analysis program is desired. Answer NO to suppress the paper tape output.
7.	INCLUDE RESULTS IN MANAGEMENT SUMMARY?	YES or NO (CR) (LF)	A reply of "YES" includes the test results in the Management Summary and gives the operator the option to start a new summary interval as indicated in the dialogue of Step 8. A reply of "NO" advances the program to the message given in Step 9. When a reply of "NO" is made, the Daily Summary will be produced but the results will not be included in the Management Summary. The use of the "NO" option is preferable when analyzing results after a special test run.
8.	START OF NEW INTERVAL?	YES or NO (CR) or (LF)	A reply of "YES" allows the operator to begin a new count of entries for the 10 different categories of test results listed in the Management Summary. The duration of the interval is at the discretion of the TELCO and may be in the order of a weekly, semi-monthly, or monthly period. *NOTE:* A reply of "YES" will destroy previously obtained data. A reply of "NO" will continue with the count that has been accumulating since the interval was begun.
9.	INCLUDE RESULTS IN INDEX REPORT?	YES or NO (CR) (LF)	A reply of "YES" includes the test results in the index report and gives the operator the option to start a new indexing interval as indicated in the dialogue of Step 10. A reply of "NO" overrides any indexing flags set during the preparation of the test files so the results are not included in the index report.
10.	START OF NEW INTERVAL?	YES or NO (CR) (LF)	A reply of "YES" allows the operator to begin the accumulation of test data starting a new index interval. *NOTE:* A reply of "YES" will destroy previously obtained data. A reply of "NO" will continue with the count that has been accumulating since the interval was begun.
11.	1 ELSBCA1122C 12/18/72 TTY # 94152221Ø33 2 RCMDCA1123J 12/18/72 TTY # 94152355351		An identification number, the ROTL office name, the date that testing was completed, and the phone number of the teleprinter in the office where results are to be sent are then printed out for the ports designated for analysis. The identification number is punched on the paper tape of the office results to provide identification of the results for each office.
12.	MONITOR RUNNING! PROGRAM NAME (OR "LIST"):		At the completion of the Analysis Program, the Monitor Program is automatically recalled.

TABLE B

ANALYSIS PROGRAM DIAGNOSTIC MESSAGES

MESSAGE	MEANING AND ACTION
FAILED TO READ OLD SUMMARY INFORMATION. NEW INDEX AND MANAGEMENT INTERVALS STARTED.	A disc-read error was encountered when trying to read summary heading. All previous summary data is lost and new intervals are started for both the Management and the Index Summaries.
MANAGEMENT SUMMARY TABLE NOT INITIALIZED. NEW MANAGEMENT AND INDEX INTERVALS STARTED.	The summary header was not properly initialized or was destroyed by a disc malfunction. All previous summary data is lost and new intervals are started for both the Management and the Index Summaries.
INVALID RESPONSE.	Operator response to a question was not valid. Type in correct response.
LINE PRINTER NOT READY.	The line printer is not in on-line mode. Check that line printer is "ON" and that it is loaded with paper. Then put it "ON-LINE" and type "GO" to resume analysis.
STATE REQUEST:	Typed in response to operator striking a key on the Teleprinter or after some diagnostics. Program can be halted, continued, or restarted by typing "STOP", "GO", or "BEGIN", respectively.
PUNCH NOT READY.	The punch is not ready. Operator should turn on the punch and type "GO" to continue the analysis.
TAPE SUPPLY LOW.	The operator should reload the punch with tape and type "GO" to continue the analysis.
TEST RESULT OVERFLOW.	The number of troubles for a given office has exceeded the disc buffer space for results. All test results accumulated up to the time when an overflow condition occurs will be outputted prematurely as if it were the end of the office file. Analysis will then continue with the current office. Two office results tapes will be produced; however, the summary information will be accumulated for the office.
DISC FAILED TO READ.	The disc encountered an error in trying to read. After five consecutive errors, the program will terminate. The Disc Memory Test should be run and the service representative called if the test requirements are not met. Refer to Section 103-251-500.
DISC FAILED TO WRITE	The disc encountered an error when attempting to write data. After five consecutive errors, the program will terminate. The Disc Memory Test should then be run and the computer service representative called if the diagnostic fails. Refer to Section 103-251-500.

TABLE C

TRUNK GROUP PROBLEMS REPORTED IN CAROT OPERATIONAL SUMMARY

MESSAGE	MEANING AND ACTION
SELF-CHECK FAILURE ±X.X ±Y.Y ±ZZ ±WW Q9MN (See Note)	A ROTL or far-end responder has failed its self-check. XX and ZZ are the ROTL responder loss and noise deviations; YY and WW are the far-end loss and noise deviations, respectively. Q9MN is the self-check flag where M is L or N for loss or noise and N is 1 or 2 for near-end or far-end responder, respectively.
FAR-END TEST LINE BUSY FOR: (See Note)	The far-end test line was BUSY for all trunks in the trunk group. Their cause should be investigated by the CAROT Center.
ANSWER SUPERVISION NOT RETURNED FROM FAR END FOR: (See Note)	The ROTL did not receive supervision from the far end for all trunks in the group. Refer this to the field as a trouble.
INVALID CHARACTER IN ROTL TABLE.	First character of ROTL record was not "$" or "@". ROTL office involved is skipped. No action is required unless this is a chronic problem; in which case, run the Disc Diagnostic Program.
INVALID CHARACTER IN TEST GROUP TABLE.	First character of test group record was not "@", "!", or "#"; or test type was not "T" or "O". Test group involved is skipped. No action is required unless this is a chronic problem; in which case, run the Disc Diagnostic Program.
INVALID INDEX FLAG.	Index flag was not "0", "1", "2", "3", or "4". Test results will not be included in index information. No action is required unless this is a chronic problem; in which case, run the Disc Diagnostic Program.
INVALID END OF TEST GROUP FLAG.	End of test group flag was not "@", "quote", "%", or "space". Remainder of results for current ROTL office is skipped. No action is required unless this is a chronic problem; in which case, run the Disc Diagnostic Program.
OTHER THAN 105-TYPE TEST LINE ON CARRIER TRUNKS. (See Note)	An attempt was made to index 4-wire trunks measured in only one direction. Test results are not counted and the trunk group must be measured manually for index purposes.

NOTE: This message is printed along with the trunk group and facility identification in order to identify the equipment involved.

TABLE E

REPORT PROGRAM OPERATING PROCEDURE

STEP	PROGRAM MESSAGE	OPERATOR REPLY	COMMENTS AND ACTION
1.	MONITOR RUNNING! PROGRAM NAME (OR "LIST"):	REPORT (CR) (LF)	This message is printed on the teleprinter while the Monitor Program is running. To call in the Report Program, the operator types in "REPORT" in reply to the Monitor Program message. Carriage return, (CR), and line feed, (LF), are operator actions for completing the reply.
2.	REPORT PROGRAM RUNNING		This message indicates that the Report Program has been successfully called in and is ready to begin with the initialization dialogue.
3.	DAILY, MANAGEMENT, INDEX,OR BOTH SUMMARIES (D, M, I, or B)?	B (CR) (LF)	Operator responds by typing the letter corresponding to the desired output device followed by (CR) (LF). A reply of "B" (both) will produce a Management Summary and an Index Information Report. The operator reply shown indicates "B", a request for both reports.
4.	CAROT CENTER,OFFICE OUTPUT,OR BOTH (C, O, or B)?	C (CR) (LF)	Operator replies by typing the letter corresponding to the type of output format desired as provided by the CAROT Center and Office Outputs described in 5.02 and 5.03, respectively. A reply of "B" (both) will produce the CAROT Center Report first and then the Office Output. The operator reply shown indicates "C", a request for the CAROT Center Report.
5.	OUTPUT ON LINE PRINTER, PUNCH OR BOTH (L, P, or B)?	P (CR) (LF)	Operator selects the appropriate output device by typing the letter corresponding to the desired device. A reply of "B" (both) will produce the requested reports simultaneously on the line printer and paper tape punch. For the options referenced in lines 3, 4, and 5, the operator may enter any combination of the specified responses. The program will then produce all of the reports requested.
6.	ANY OFFICES TO BE DELETED	YES	If any offices are to be deleted from the Management Summary type YES. Otherwise proceed to Step 8.
7.	ENTER OFFICE IDENTITIES TERMINATED BY/E. SNFCCAQ5	(CR) (LF)	Specify the office to be deleted by typing the office identities. Terminate deleted office entries by typing /E.
8.	/E		Terminates deleted office entries.
9.	REPORT PROGRAM COMPLETED		This message is printed on the teleprinter at completion of the Report Program, after which control is automatically returned to the Monitor Program.
10.	MONITOR RUNNING! PROGRAM NAME (OR "LIST"):		This message indicates the Monitor Program has been recalled after completion of Report Program.

TABLE F

REPORT PROGRAM DIAGNOSTIC MESSAGES

MESSAGE	MEANING AND ACTION
DAILY OUTPUT NOT AVAILABLE.	The disc file containing the offices in the Daily Management Summary could not be read because of disc errors. No operator action is required unless this is a chronic problem; in which case, the Disc Memory test should be run and the computer service representative called if the diagnostic fails. If the disc unit is malfunctioning, the data may or may not have been destroyed. When the disc unit has been repaired, the operator should again attempt to dump the desired report.
INVALID RESPONSE	Operator has entered an invalid response. Type correct response to continue.
LINE PRINTER NOT READY	The line printer is not "ON-LINE." Check that power is on and that it is properly loaded with paper. Put line printer "ON-LINE" and type "GO" to continue.
STATE REQUEST	Printed in response to operator striking a key or after some diagnostics. Program can be terminated, continued, or restarted by typing "STOP", "GO", or "BEGIN", respectively.
PUNCH NOT READY	The punch is not ready. Operator should turn on the punch and type "GO" to continue.
TAPE SUPPLY LOW	The operator should reload the punch with tape and type "GO" to continue.
DISC FAILED TO READ	The disc encountered an error in trying to read. After five consecutive errors, the program will terminate. The Disc Memory Test should be run and the computer service representative called if it fails. Refer to Section 103-251-500.
DISC FAILED TO WRITE	The disc encountered an error in trying to write. After five consecutive errors, the program will terminate. The Disc Memory Test should be run and the computer service representative called if it fails. Refer to Section 103-251-500

TABLE G

DUMP PROGRAM DIAGNOSTIC MESSAGES

MESSAGE	MEANING AND ACTION
INVALID RESPONSE	Operator has entered an invalid response. Type correct response to continue.
LINE PRINTER NOT READY	The line printer is not "ON-LINE." Check that power is on and line printer is properly loaded with paper. Put line printer "ON-LINE" and type "GO" to continue.
STATE REQUEST	Printed in response to operator striking a key or after some diagnostics. The program may be terminated, continued, or restarted by typing "STOP", "GO", or "BEGIN", respectively.
SELECTED PORT NOT PREPARED	There is no data prepared for the port requested by the operator. Program will ask for next request.
END OF ROTL TABLE	In searching the test files, the program has encountered the end of the test file. The program will ask for the next request.
END OF TEST GROUP TABLE	In searching the test files, the program has encountered the end of the test file. The program will ask for the next request.
END OF TRUNK TABLE	In searching the test files, the program has encountered the end of the test file. The program will ask for the next request.
DISC FAILED TO READ	The disc encountered an error in trying to read. After five consecutive errors, the program will terminate. The Disc Memory Test should be run and the computer service representative called if it fails. Refer to Section 103-251-500.
PUNCH NOT READY	The punch is not ready. Operator should turn on the punch and type "GO" to continue.

TABLE H

DUMP PROGRAM OPERATING PROCEDURE

STEP	PROGRAM MESSAGE	OPERATOR REPLY	COMMENTS AND ACTION
1.	MONITOR RUNNING! PROGRAM NAME (OR "LIST"):	DUMP (CR) (LF)	This message is printed on the teleprinter while the Monitor Program is running. To call in the Dump Program, the operator types "DUMP" in reply to the Monitor Program message. Carriage Return, (CR), and Line Feed, (LF), are operator actions for completing the reply.
2.	DUMP PROGRAM IS RUNNING		This message indicates that the Dump Program has been loaded and is ready to begin with initialization dialogue.
3.	OUTPUT ON PUNCH, LINE PRINTER OR BOTH (P, L or B)?	L (CR) (LF)	Operator responds by typing the letter corresponding to the desired output device, followed by (CR) (LF). In this case the operator selected the line printer. A reply of "B" (both) will produce a Dump Report on both the paper tape punch and line printer. If there is no line printer included with the CAROT system, specifying "L" will cause the output to be produced on the teleprinter.
4.	DUMP OF PORT, ROTL, TRUNK GROUP OR ALL DATA (P, R, T or A)	P (CR) (LF)	Operator responds by typing the appropriate letter (P, R, T or A) to obtain the desired data. If the operator reply is "R", the program initializes the dialogue indicated in Steps 7 and 8. If the operator reply is "T", the program initializes the dialogue indicated in Steps 9 and 10. If the operator replys with "A", the program dumps the data for each ROTL office in the test file, starting with the lowest numbered port prepared and working toward the highest port number. The offices on a given port are dumped in the order in which they were loaded by the Prepare Program. When all data has been dumped, the conclusion of the operation is indicated by the message printed out in Step 11. If the operator reply is "P" (as indicated), the following dialogue pertaining to a dump of port data as indicated in Steps 5 and 6 is initialized.
5.	SELECT PORT NUMBER	2 (CR) (LF)	The operator then replies with the desired port number. In this case port 2 is selected to be dumped. If data has been previously prepared for the selected port, it will be dumped as specified and operations will continue until all port data has been outputted. At the conclusion of the operation, the message indicated in Step 11 will be printed out. If there is no test file prepared for the port requested, the message listed in Step 6 will be printed out. The dump operation will proceed to Step 11.
6.	SELECTED PORT NOT PREPARED		Port selected to be dumped has no prepared test file. Program will again print out message indicated in Step 4.
7.	TYPE ROTL OFFICE NAME 94152230070	(CR) (LF)	This message is printed out in reply to the response "R" as applicable to the message in Step 4. The operator should then enter up to 11 characters of the ROTL office identity followed by (CR) (LF). The program will then search the test files for all ports and dump the file for the specified office.
8.	END OF ROTL TABLE		This message is printed out at completion of the dumping of the associated test file for the specified ROTL office or in the event the ROTL office specified is not found in the test file. The dump operation will then continue to Step 11.
9.	TYPE TRUNK GROUP ID. ELSBCA1122CM-BKLYCA0164CDF55IE	(CR) (LF)	This message is printed out in reply to the response "T" as applicable to the message in Step 4. The program asks for the trunk group indentity which the operator must supply by entering up to 34 characters of the trunk group common language identity, as it appears in the TMF, followed by (CR) (LF). This results in the dumping of a particular trunk group which is similar to dumping data for a ROTL office.
10.	END OF TEST GROUP TABLE		This message is printed out at completion of the dumping of the associated test file for the specified trunk group, or in the event the trunk group specified is not found in the test file. The dump operation will then procede to Step 11.
11.	JOB COMPLETE STATE REQUEST	STOP (CR) (LF)	This message is printed out at conclusion of the dumping operation as per the request made in response to the message of Step 4. The operator can respond with either "STOP" to return to the Monitor Program or "BEGIN" if more data is desired. If "BEGIN" is selected, the program will restart at Step 3 (the point where the program requests which output device is to be used) and continues as described above.

TABLE I

ROTL PRIMING FORMATS

(1) ROTL TYPE / PRIMING DIGITS	SMALL 5 X B	SMALL S X S	EXPANDED 5 X B	EXPANDED 5 X B PBX TRUNKS WITH LLP, TYP=2	EXPANDED S X S	1 X B XBT	NO. 1 ESS NO. 2 ESS	NO. 4 ESS
1	TEST TYPE (2)	TEST TYPE (2)	"K" KEY PULSE	"K" KEY PULSE	"K"	"K"	"K"	"K"
2	FRAME UNITS	TEST	TEST	TEST	TEST	TEST	TEST	TEST
3	ROTL C (3)	CONNECTOR	CODE (4)	CODE (4)	CODE (4)	CODE (4)	CODE (4)	CODE (4)
4	TRUNK UNITS	NUMBER	TYP	TYP	TEST	SWITCH	LOCAL (0) OR TANDEM (1, 2) MODE	
5	ROUTE TRANS UNITS	"2" FILLER DIGIT	TR	TR	CONNECTOR	NUMBER		TRUNK
6			MG	MG	NUMBER	SELECT MAGNET	TRUNK	APPERANCE
7			CTA	CTA		HOLD	NETWORK	NUMBER
8			CU	CG	PULSING	MAGNET	NUMBER	
9			CRU	TI	TEST	PULSING		
10			CG	TF	LINE (5)			
11			RA	TT	NUMBER	TEST	TEST	TEST
12			TI	TEST		LINE (5)	LINE (5)	LINE (6)
13			TF	LINE (5)		NUMBER	NUMBER	NUMBER
14			TT	NUMBER				
15			TEST					
16			LINE (5)					
17			NUMBER					
18								"S"
19					"S"			
20								
21						"S"	"S"	
22				"S"				
23								
24								
25			"S" (start)					

Notes:

(1) Refer to Section 010-410-312 for the meaning and numeric values of the priming digits.

(2) TEST TYPE 1 — Test to transmission test line.
2 — Test to operational test line.

(3) ROTL A and C Values — See Table J.

(4) TEST CODE Values — See Table K.

(5) Consists of up to 10 digits followed immediately by the "S" (start) digit.

(6) Consists of up to 7 digits followed immediately by the "S" (start) digit.

TABLE J

VALUES OF ROTL "A" AND "C" DIGITS

"A" DIGIT	"C" DIGIT	ROUTE TRANSLATION TENS	BUSY TEST LEAD TENS	FRAME TENS
1/2	0	0	0	0
1/2	1	0	0	1
1/2	2	0	1	0
1/2	3	0	1	1
1/2	4	1	0	0
1/2	5	1	0	1
1/2	6	1	1	0
1/2	7	1	1	1
6/7	0	0	0	2
6/7	1	2	0	1
6/7	2	0	1	2
6/7	3	2	1	1
6/7	4	1	0	2
6/7	5	2	0	0
6/7	6	1	1	2
6/7	7	2	1	0
6/7	8	2	0	2
6/7	9	2	1	2

Note: "A" digit values 1 and 6 are for transmission testing and values 2 and 7 are for operational testing.

TABLE K

TEST CODE VALUES AND MEANING
FOR EXPANDED ROTLS

Test Code	Meaning
	Transmission Test To:
00	100-Type Test Line
02	102-Type Test Line
05	105 Type Test Line
	Transmission Test With Maintenance Busy Override To:
10	100-Type Test Line
12	102-Type Test Line
15	105-Type Test Line
	Operational Test To:
23	103-Type Test Line
21	Synchronous Test Line
20	Non-synchronous Test Line
	Operational Test With Maintenance Busy Override To:
33	103-Type Test Line
31	Synchronous Test Line
30	Non-synchronous Test Line